C l a i m s:

1. Traction sheave hoist for lifting a platform displaceable by means of at least two ropes, said hoist having a motor-driven traction sheave around the circumference of which at least a first rope groove and a second rope groove are formed, and a first hold-down system for the first rope groove and a second hold-down system for the second rope groove with which the ropes wrapping around the traction sheave are pressed into the corresponding rope grooves during operation, **characterised in that** an adjustment device (30) is assigned to at least one of the hold-down systems (20) with which the position or engagement depth of the rope (2, 3, 4, 5) in the rope groove (14, 15, 16, 17) achieved with the corresponding hold-down system (20) can be controllably varied.

2. Traction sheave hoist according to Claim 1, **characterised in that** an adjustment device (30) is assigned to each of the hold-down systems (20A, 20B, 20C, 20D) with which the position or engagement depth of the corresponding rope (2-5) in its rope groove (14, 15, 16, 17) can be varied in relation to the position or engagement depth of the other ropes in their rope grooves.

3. Traction sheave hoist according to Claim 1 or 2, **characterised in that the** traction sheave (13) has a total of four rope grooves (14, 15, 16, 17) around its circumference (13'), with all four rope grooves preferably being provided to take load-bearing ropes (2, 3, 4, 5).

4. Traction sheave hoist according to one of Claims 1 to 3, **characterised in that** each adjustment device (30) can be controlled separately and/or comprises a lifting magnet (32) as an adjustment element.

5. Traction sheave hoist according to one of Claims 1 to 4, **characterised in that** the adjustment device (30) is connected to the hold-down system (20) via a connecting device transmitting only tensile forces, in particular a chain (31).

6. Traction sheave hoist according to one of Claims 1 to 5, **characterised in that** each hold-down system (20) has a pivot-mounted lever (24) on the housing (12) to which a tie rod (26) is linked that presses or preloads the lever (24) against the traction sheave (13) by means of a pressure spring (27).

7. Traction sheave hoist according to one of Claims 1 to 6, **characterised in that** each hold-down system (20) has two hold-down rollers (21) mounted pivotably on a roller support (22).

8. Traction sheave hoist according to Claim 6 or 7, **characterised in that** the adjustment device (30) is arranged in series with the pressure spring (27) and/or in series with the tie rod (26).

9. Traction sheave hoist according to one of Claims 1 to 8, **characterised by** an evaluation and control device (8) assigned to the adjustment devices (30) with which the adjustment devices (30) to change the position of each hold-down system (20A, 20B, 20C, 20D) can be controllably adjusted.

10. Traction sheave hoist according to one of Claims 1 to 9, **characterised by** a winding device (40) for each rope (2-5), said winding device (40) being driven by the motor (12) for the traction sheave (13).

11. Traction sheave hoist according to Claim 10, **characterised in that** the winding device (40) for each rope (2, 3, 4, 5) has a winding drum (41A, 41B, 41C, 41D), each provided with an external gearing (47), wherein a drive gear (48) mounted on an output shaft (50) preferable meshes with each external gearing, preferably via a slip clutch (49), wherein the output shaft (50) is also preferably connected to the drive shaft (19) for the traction sheave (13) with a freewheel in one direction of rotation and a drive in the other direction of rotation.

12. Traction sheave hoist according to Claim 11, **characterised in that** at least one, preferably two controllable braking devices (55) are assigned to the output shaft (50).

13. Traction sheave hoist according to one of Claims 1 to 12, **characterised in that** a sensor device (60) for detection of slack rope and/or overload is provided for each rope (2, 3, 4, 5) or for each load rope (2, 5), wherein the sensor device (60) preferably permits the detection of slack rope and overload at the same time.

14. Traction sheave hoist according to Claim 13, **characterised in that** the sensor device (60) has a sensor arm (66) mounted pivotably about a pivot bearing (64) and a sensing arm (63) mounted pivotably about the pivot bearing (64) on which a sensing roller (61) that is in

contact with the corresponding rope during operation is mounted pivotably about a pivot bearing (62), wherein the sensing arm (63) is preferably connected to the sensor arm (66) via a preloading spring (80) that slews the sensing arm (63) relative to the sensor arm (66) in relation to the contact force acting on the sensing roller (61).

15. Traction sheave hoist according to Claim 14, **characterised in that a** sensing arm (63) with sensing roller (61) is provided for each load rope (2, 4) or for each rope (2-5), wherein the sensor arms (66) of all the sensor devices (60) are rigidly connected to one another.

16. Traction sheave hoist according to Claim 14 or 15, **characterised in that** the slewing position of the sensing arm (63) can be sensed with a first, preferably multi-position switch (82) and the slewing position of the sensor arm (66) can be sensed with a second switch (81).

17. Traction sheave hoist according to one of Claims 1 to 16, **characterised in that** a ratchet wheel (90) of a centrifugal trip device is attached to the traction sheave (13).

18. Service lift with a platform (1) displaceable by means of at least two, preferably four ropes (2, 3, 4, 5) and a traction sheave hoist (10) that comprises a traction sheave (13) driven by a motor (12) and having a rope groove (14, 15, 16, 17) for each rope (2, 3, 4, 5) around its circumference (13'), **characterised in that** the traction sheave hoist is designed according to one of Claims 1 to 17.

19. Service lift according to Claim 18, **characterised in that** a measuring sensor, in particular an angle sensor (6), is assigned to the platform (1), wherein the measuring signals of the angle sensor (6) are fed to an evaluation and control device (8) that controls the adjustment devices (30) for the hold-down systems (20) for each rope in relation to the measuring signals.

20. Service lift according to Claim 19, **characterised in that** at least one of the ropes is designed as an electric conductor for transmission of the signals between the measuring sensor (6) and the evaluation and control device (8).